BOOKS

WOOD SCIENCE FOR PROMOTING LEGAL TIMBER, edited by Alex C. Wiedenhoeft and Pieter Baas. Reprinted from IAWA Journal 32:121-296. ISSN 0928-1541. To be ordered from IAWA Office, NCB-Naturalis-National Herbarium, P.O. Box 9514, 2300 RA Leiden, The Netherlands. Price: EUR 25.00, US $35.00 (excluding postage and handling).

The volume "Wood Science for Promoting Legal Timber Harvest" is a collection of papers that were presented during a joint conference of IAWA, IAWS, and IUFRO in Madison, WI, in June 2010. In effect a proceeding of that conference that is supplemented by several invited articles that contribute greatly to the usefulness of the final product, the various contributions have been woven into an easy-to-read volume by editors Alex Wiedenhoeft and Pieter Baas.

As explained by the editors, this work examines the state of the art in wood science as it relates to rapid species identification and the ability to trace the provenance of timber through a chain of custody with a goal of assisting in global efforts to reduce illegal logging. With this goal in mind, the volume combines highly technical papers on aspects of wood anatomy, molecular biology, and chemistry with an introductory paper that encapsulates recent developments in policy, law, and international trade related to illegally sourced wood.

The focus of the volume is the Convention on International Trade in Endangered Species (CITES) and the U.S. Lacey Act that was recently expanded to explicitly encompass trade in wood and wood products. As noted in an extensive discussion of the potential role of wood anatomy in supporting legal timber trade, a significant problem in enforcement of CITES is that positive identification of a number of species on the CITES list is difficult to impossible using traditional means (light microscopy), a reality that does not mesh with expectations of legislators.

Adding a requirement that positive identification must be rapid to be useful complicates the search for solutions.

Challenges notwithstanding, there are several well-developed computer-aided wood identification systems that are assisting regulators in efforts to stem the illegal timber trade. These systems are described in general terms in several papers with discussion and examples of how they are used. As a follow-up to these papers, a summary of machine vision systems is presented, basically how they work, how images are acquired and digitized, the issue of resolution, how patterns are distinguished, and finally how such a system might be applied in rapid identification of species.

Discussion then turns to the topics of DNA extraction and analysis and chemical analysis using near IR spectroscopy as wood and species identification tools. Both areas are described as having promise in rapid, accurate wood identification. Indeed, DNA analysis offers the opportunity to track specific logs and products back to a single tree. It is noted, however, that problems remain with these technologies with a need in all cases for more extensive databases to allow for better understanding of the effects of drying, storage periods, sampling techniques, property variation, and other factors on specific indicators.

This publication provides a critical overview of the potential role of wood science in stemming the illegal timber trade. Specific needs in the areas of research and education of policymakers are identified, and recommendations are made as to how the effectiveness of policy could be improved. It is a valuable addition to the literature that will have great practical value in the near term.

Jim L. Bowyer
Director, Responsible Materials Program
Dovetail Partners, Inc.
E-mail: jimbowyer@comcast.net